



## Appendix C ENVIRONMENTAL EVALUATION

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## **Appendix C**

# **ENVIRONMENTAL EVALUATION**

*Master Plan*  
*Holbrook Municipal Airport*

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Analysis of the potential environmental impacts of proposed airport development is an important component of the airport master plan process. The primary purpose of the environmental evaluation is to assess the proposed development program for Holbrook Municipal Airport and to identify any potential environmental concerns or “red flags” to development.

An important element of this evaluation was coordination with appropriate federal, state, and local agencies to identify potential environmental concerns that should be considered prior to the design and construction of new facilities at the airport. Agency coordination consisted of a letter requesting comments and/or information regarding the potential environmental effects of proposed airport development over the next 20 years. Issues of concern that were identified as part of this process are presented in the following sections. The letters received from the various agencies are included in **Appendix D**.

Any major improvements planned for Holbrook Municipal Airport (i.e., crosswind runway construction) will require compliance with the National Environmental Policy Act (NEPA) of 1969, as amended. Compliance with NEPA is generally satisfied by the preparation of an Environmental Assessment (EA) or Environmental Impact Statement (EIS). While this section of the Master Plan is not structured to satisfy NEPA requirements, it is intended to supply a preliminary review of environmental considerations that would need to be analyzed in more detail within the NEPA process.

## **PROPOSED DEVELOPMENT**

As a result of the Master Plan process, a number of improvements have been recommended for implementation during the planning period. These improvements are illustrated in Chapter Five. The following is a list of the major projects recommended for Holbrook Municipal Airport:

- Shift Runway 3-21 1,200 feet north by adding 1,200 feet to the Runway 21 threshold.
- Strengthen Runway 3-21 pavement weight bearing capacity.
- Acquire approximately 135 acres of land to provide for threshold facility development and protect safety areas.
- Reconstruct the unpaved crosswind runway to meet FAA design standards.
- Establish GPS approach procedures to each end of Runway 3-21.
- Relocate Taxiway A to meet FAA design standards.
- Expand aircraft parking apron.
- Install precision approach path indicators (PAPIs) and runway end identifier lights (REILs) at each end of Runway 11-29.
- Construct a terminal building, aircraft wash facility, and additional enclosed T-hangars.
- Remove an existing storage hangar and house.
- Construct a camping and recreational area.

## **ENVIRONMENTAL CONSEQUENCES - SPECIFIC IMPACTS**

This environmental evaluation has been prepared using *FAA Order 1050.1D, Policies and Procedures for Considering Environmental Impacts*, and *FAA Order 5050.4A, Airport Environmental Handbook* as guidelines. Several factors are considered in a formal environmental document, such as an EA or EIS, which are not included in an environmental evaluation. These factors include details regarding the project location, historical perspective, existing conditions at the airport, and the purpose and need for the project. This information is available within the Master Plan document. A formal environmental document also includes the resolution of issues/impacts identified as significant during the environmental process. This environmental evaluation only identifies potential environmental issues and does not address mitigation of the resolution of environmental impacts. The following subsections address each of the specific impact categories outlined by *FAA Order 5050.4A*.

### **NOISE**

Aircraft sound emissions are often the most noticeable environmental effect an airport will produce on the surrounding community. If the sound is sufficiently loud or frequent in occurrence it may interfere with various activities or otherwise be considered objectionable.

To determine the noise related impacts that the proposed development could have on the environment surrounding Holbrook Municipal Airport, noise exposure patterns have been developed for both existing airport activity conditions and projected long term activity conditions.

## **Noise Contour Development**

The basic methodology employed to define aircraft noise levels involves the use of a mathematical model for aircraft noise predication. The Yearly Day-Night Average Sound Level (DNL) is used in this study to assess aircraft noise. DNL is the metric currently accepted by the FAA, Environmental Protection Agency (EPA), and Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative noise exposure. These three federal agencies have each identified the 65 DNL noise contour as the threshold of incompatibility, meaning that noise levels below 65 DNL are considered compatible with underlying land uses. Most federally funded airport noise studies use DNL as the primary metric for evaluating noise.

DNL is defined as the average A-weighted sound level as measured in decibels (dB), during a 24-hour period. A 10 dB penalty is applied to noise events occurring at night (10:00 p.m. to 7:00 a.m.). DNL is a summation metric which allows objective analysis and can describe noise exposure comprehensively over a large area.

Since noise decreases at a constant rate in all directions from a source, points of equal DNL noise levels are routinely indicated by means of a contour line. The various contour lines are then superimposed on a map of the airport and its environs. It is important to recognize that a line drawn on a map does not imply that a particular noise condition exists on one side of the line and not on the other. DNL calculations do not precisely define noise impacts. Nevertheless, DNL contours can be used to: (1) highlight existing or potential incompatibilities between airport and any surrounding development; (2) assess relative exposure levels; (3) assist in the preparation of airport environs land use plans; and (4) provide guidance in the development of land use control devices, such as zoning ordinances, subdivision regulations, and building codes.

The noise contours for Holbrook Municipal Airport have been developed from the Integrated Noise Model (INM), Version 5.2. The INM was developed by the Transportation Systems Center of the U.S. Department of Transportation at Cambridge, Massachusetts, and has been specified by the FAA as one of the two models acceptable for federally funded noise analysis.

The INM is a computer model which accounts for each aircraft along flight tracks during an average 24-hour period. These flight tracks are coupled with separate tables contained in the data base of the INM which relate to noise, distances, and engine thrust for each make and model of aircraft type selected.

Computer input files for the noise analysis assumed implementation of the recommended development of the airport as identified in Chapter Five on **Exhibit 5A**. The input files contain operational data, runway utilization, aircraft flight tracks, and fleet mix as projected in the plan. The operational data used is summarized in **Table A**. For more detailed information of the aviation forecasts for Holbrook Municipal Airport, refer to Chapter Two, Aviation Demand Forecasts.

<b>TABLE A</b>					
<b>Noise Model Input: Aircraft Operations</b>					
<b>Operations By Type</b>	<b>Single Engine</b>	<b>Multi- Engine</b>	<b>Turboprop</b>	<b>Jet (Citation)</b>	<b>Rotorcraft</b>
<b>Existing Conditions - 1997</b>					
Local	962	299	0	0	0
Itinerant	2,886	897	52	52	52
<b>Total</b>	<b>3,848</b>	<b>1,196</b>	<b>52</b>	<b>52</b>	<b>52</b>
<b>Future Conditions - 2020</b>					
Local	2,609	811	0	0	0
Itinerant	7,825	2,432	141	141	141
<b>Total</b>	<b>10,434</b>	<b>3,243</b>	<b>141</b>	<b>141</b>	<b>141</b>
Source: Coffman Associates Analysis.					

Basis assumptions used as input to the INM are presented in **Table B**. Because of the construction of the crosswind Runway 11-29 and smaller aircraft utilizing it more often, the runway use percentages and day/night split were assumed to slightly decrease for Runway 3-21, and slightly increase for Runway 11-29.

<b>TABLE B</b>				
<b>Noise Model Input: Runway Use Percentages</b>				
<b>Runway</b>	<b>Existing (1997)</b>		<b>Proposed Action</b>	
	<b>Bus. Jet/TP/ME</b>	<b>GA</b>	<b>Bus. Jet/TP/ME</b>	<b>GA</b>
3	15%	10%	20%	10%
21	85%	80%	80%	70%
11	0%	5%	0%	10%
29	0%	5%	0%	10%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
Note: Bus. Jet refers to operations by business jet-type aircraft. TP refers to turboprop type aircraft and ME refers to multi-engine type aircraft. GA refers to all to other general aviation operations.				
Source: Coffman Associates Analysis.				

## **Results of the Noise Analysis**

The aircraft noise contours generated using the aforementioned data for Holbrook Municipal Airport are depicted on **Exhibit A, Existing Noise Exposure** and **Exhibit B, 2020 Noise Exposure**. As shown on both exhibits, the 65 DNL noise contour is expected to remain within the existing airport property line when considering both existing and forecast activity at the airport.

## **COMPATIBLE LAND USE**

Federal Aviation Regulations (F.A.R.) Part 150 recommends guidelines for planning land use compatibility within various levels of aircraft noise exposure as summarized on **Exhibit C**. As the name indicates, these are guidelines only; F.A.R. Part 150 explicitly states that determinations of noise compatibility and regulation of land use are purely local responsibilities.

Based upon the results of the noise modeling efforts, the 65 DNL noise contour is expected to remain on airport property and no existing residences, or other noise sensitive land uses (e.g. hospitals, nursing homes, schools, etc.) are located within the either the existing or ultimate noise exposure contour. Therefore, no significant noise impacts are expected as a result of the proposed development.

The primary goal of compatible land use planning is to achieve and maintain compatibility between the airport and its surrounding community. Inherent in this goal is the assurance that the airport can maintain or expand its size and level of operations to satisfy existing and future aviation demand. The protection of the investment in a facility such as an airport is of great importance. At the same time, a person who lives, works, or owns property near an airport should be able to enjoy the location without infringement by noise or other adverse impacts of the airport.

## **SOCIAL IMPACTS**

Social impacts known to result from airport improvement projects are often associated with the relocation of residences and businesses or other community disruptions. Development of the proposed improvements at Holbrook Municipal Airport is not expected to result in the relocation or removal of a residence or business.

The proposed development and associated land acquisition are not anticipated to divide or disrupt and established community, interfere with orderly planned development, or create a short-term, appreciable change in employment. The proposed land acquisition as a part of airport development is currently undeveloped and used for agricultural purposes.

## INDUCED SOCIOECONOMIC IMPACTS

Induced socioeconomic impacts address those secondary impacts to surrounding communities resulting from the proposed development, including shifts in patterns of population movement and growth, public service demands, and changes in business and economic activity to the extent influenced by the airport development. According to *FAA Order 5050.4A*, "Induced impacts will normally not be significant except where the area also has significant impacts in other categories, especially noise, land use, or direct social impacts."

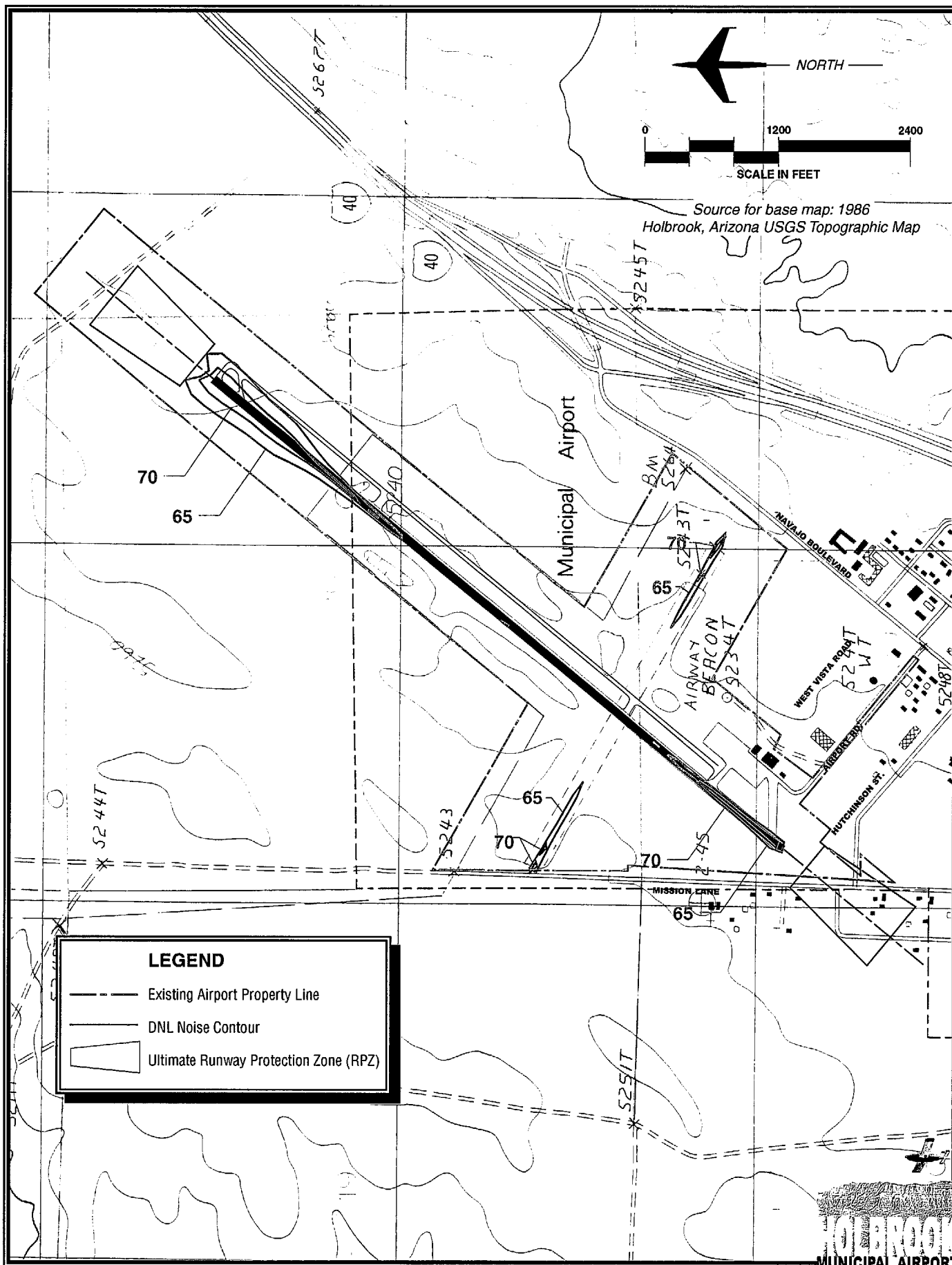
Significant shifts in patterns of population movement or growth or public service demands are not anticipated as a result of the proposed development. It is expected, however, that the proposed new airport development would potentially induce positive socioeconomic impacts for the community over a period of years. The airport, with expanded facilities and services would be expected to attract additional users. It is expected to encourage tourism, industry, and trade and to enhance the future growth and expansion of the community's economic base. Future socioeconomic impacts resulting from the proposed development would be expected to be primarily positive in nature.

## AIR QUALITY

The Federal government has established a set of health-based ambient air quality standards (NAAQS) for the following six pollutants: carbon monoxide (CO), nitrogen dioxide (NO<sub>x</sub>), sulphur dioxide (SO<sub>x</sub>), ozone, lead, and PM10 (particulate matter of 10 microns or smaller). Currently, only airports in non-attainment and maintenance areas must meet the requirements of the General Conformity Rule provided in the Federal Clean Air Act; airports in attainment areas are assumed to conform.

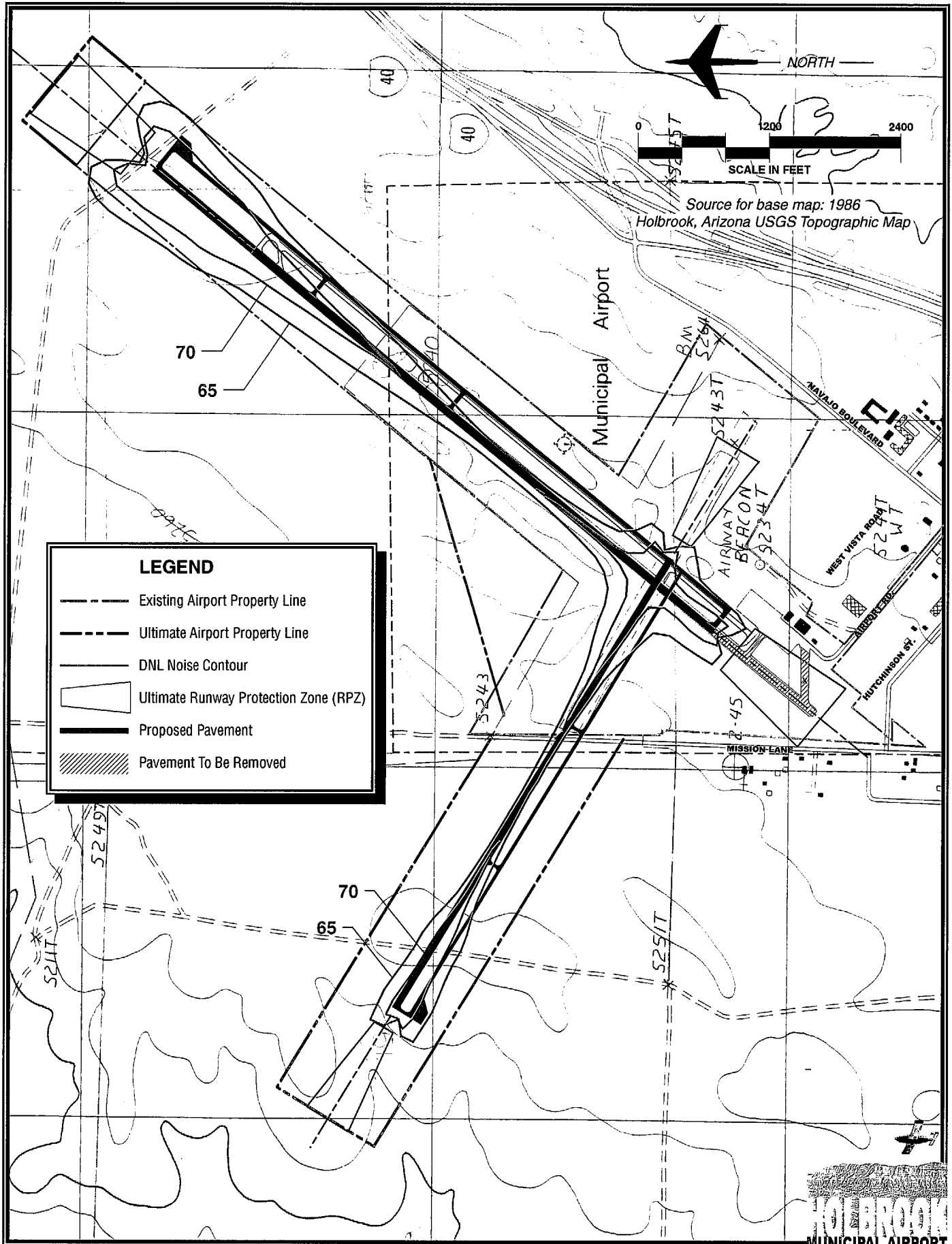
According to maps maintained by the United States Environmental Protection Agency, the proposed project does not fall within any non-attainment area, as designated by EPA pursuant to Section 107 of the Clean Air Act; therefore, the General Conformity Rule does not apply. In addition, since the airport is not expected to enplane 1.3 million passengers and is projected to have less than 180,000 annual general aviation operations, no air quality analysis will be needed as part of any formal NEPA document submission.

The proposed development plan can result in short-term air emissions resulting from the actual construction activities. During construction of proposed development items, the ADEQ recommended that steps should be taken to minimize the amount of particulate matter (dust) generated, including incidental emissions caused by strong winds, as well as tracking of dirt off the construction sites by machinery and trucks. Portable sources of air pollution, such as rock, sand, gravel and asphaltic concrete plants are required to be permitted by ADEQ prior to commencing operations.



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LAND USE	Yearly Day-Night Average Sound Level (DNL) in Decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
<b>RESIDENTIAL</b>						
Residential, other than mobile homes and transient lodgings	Y	N <sup>1</sup>	N <sup>1</sup>	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N
<b>PUBLIC USE</b>						
Schools	Y	N <sup>1</sup>	N <sup>1</sup>	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	Y <sup>4</sup>
Parking	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
<b>COMMERCIAL USE</b>						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail-building materials, hardware and farm equipment	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
Retail trade-general	Y	Y	25	30	N	N
Utilities	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
Communication	Y	Y	25	30	N	N
<b>MANUFACTURING AND PRODUCTION</b>						
Manufacturing, general	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y <sup>6</sup>	Y <sup>7</sup>	Y <sup>8</sup>	Y <sup>8</sup>	Y <sup>8</sup>
Livestock farming and breeding	Y	Y <sup>6</sup>	Y <sup>7</sup>	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
<b>RECREATIONAL</b>						
Outdoor sports arenas and spectator sports	Y	Y <sup>5</sup>	Y <sup>5</sup>	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

See other side for notes and key to table.

## KEY

<b>Y (Yes)</b>	Land Use and related structures compatible without restrictions.
<b>N (No)</b>	Land Use and related structures are not compatible and should be prohibited.
<b>NLR</b>	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
<b>25, 30, 35</b>	Land Use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

## NOTES

- 1 Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
- 2 Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- 3 Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- 4 Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- 5 Land use compatible provided special sound reinforcement systems are installed.
- 6 Residential buildings require a NLR of 25.
- 7 Residential buildings require a NLR of 30.
- 8 Residential buildings not permitted.

Source: *F.A.R. Part 150, Appendix A, Table 1.*

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## WATER QUALITY

Airport activities can have a major impact on water quality. The Clean Air Water Act provides the authority to establish water quality standards, control discharges into surface and subsurface waters, develop waste management treatment plans, and issue permits for discharges and for dredged or fill materials.

According to correspondence received from the Arizona Department of Environmental Quality, the proposed development is located within the Leroux Wash watershed, within Hydrologic Unit Area (HUA) #15020009. The Leroux Wash watershed is a Category III watershed, indicating that there are pristine or sensitive aquatic system conditions on lands administered by federal, state or tribal governments.

Construction of the proposed improvements will result in an increase in impermeable surfaces and a resulting increase in surface runoff from both landside and airside facilities. The proposed development might result in short-term impacts on water quality, particularly suspended sediments, during and shortly after precipitation events during the construction phase.

Recommendations established in *FAA Advisory Circular 150/5370-10 Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion and Siltation Control* should be incorporated in project design specifications to mitigate potential impacts. These standards include temporary measures to control water pollution, soil erosion, and siltation through the use of fiber mats, gravel, mulches, slope drains, and other erosion control methods.

In accordance with Section 402(p) of the *Clean Water Act*, a *National Pollution Discharge Elimination System* (NPDES) General Permit is required from the Environmental Protection Agency. NPDES requirements apply to industrial facilities, including airports and all construction projects that disturb five or more acres of land.

With regard to construction activities, the City of Holbrook and all applicable contractors will need to comply with the requirements and procedures of the NPDES General Permit, including the preparation of a *Notice of Intent* and a *Stormwater Pollution Prevention Plan*, prior to the initiation of project construction activities.

The construction program, as well as specific characteristics of project design, should incorporate *Best Management Practices* (BMPS) to reduce erosion, minimize sedimentation, control non-stormwater discharges, and protect the quality of surface water features potentially affected. BMPs are defined as nonstructural and structural practices that provide the most efficient and practical means of reducing or preventing pollution of stormwater. The selection of these practices at Holbrook Municipal Airport should be based on the sites' characteristics and focus on those categories of erosion within the contractor's control, including: (1) construction scheduling, (2) limiting exposed areas, (3) runoff velocity reduction, (4) sediment trapping, and (5) good

housekeeping practices. Inspections of the construction site and associated reporting may be required.

According to the Corps of Engineers, the construction activities associated with airport development will require a permit issued under Section 404 of the Clean Water Act since the proposed crosswind runway would discharge dredged or fill materials into the waters of the United States.

Also of crucial concern would be spills and leaks of substances that could filter through the soils and contaminate groundwater resources. As growth in aviation activity occurs, additional fuel storage facilities will be necessary. Fuel storage facilities must be designed, constructed, and maintained in compliance with Federal, State, and local regulations. These regulations include standards for underground storage tank construction materials, the installation of leak or spill detection devices, above ground fuel storage tanks may require State Fire Marshall approval. Additionally, waste fluids, particularly oils, coolants, and degreasers, require proper management and disposal. All underground storage tanks must be registered with ADEQ.

Included in their response, the ADEQ noted that an Aquifer Protection Permit may be required.

## **DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(F) LANDS**

Paragraph 47e, *FAA Order 5050.4A* provides the following:

*(7)(a) "Section 4(f) provides that the Secretary shall not approve any program or project which requires the use of any publicly-owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance, or any land from an historic site of national, state or local significance as determined by the officials having jurisdiction thereof unless there is no feasible and prudent alternative to the use of such land and such program includes all possible planning to minimize harm."*

*(7)(b) "...When there is no physical taking but there is the possibility of use of or adverse impacts to Section 4(f) land, the FAA must determine if the activity associated with the proposal conflicts with or is compatible with the normal activity associated with this land. The proposed action is compatible if it would not affect the normal activity of aesthetic value of public park, recreation area, refuge, or historic site. When so construed, the action would not constitute use and would not, therefore, invoke Section 4(f) of the DOT Act."*

The proposed airport development is not anticipated to impact any Section 4(f) properties.

## **HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES**

The Arizona State Parks, Navajo Nation, and the Hopi Tribe were contacted regarding the potential presence of cultural resources within the area of proposed development. The Arizona State Parks recommended that the area be surveyed by a qualified archaeologist in order to identify any archaeological resources that may be present. They also identified that the aircraft storage hangar and house (constructed in the early 1940's) be evaluated by a qualified historic preservation consultant to determine their eligibility for listing in the National Register of Historic Places.

The Navajo Nation Historic Preservation Department (HPD) Traditional Culture Program (TCP) indicated that they had no concerns with the proposed airport development. The Hopi Tribe responded and determined that the proposed airport development is within the religious eagle collecting areas of the Bear Strap Clan from the Hopi Village of Shungopavi. However, the proposed project will not adversely impact known eagle nests. Should any archaeological reports or findings be encountered during any preconstruction activities, work should cease in the area of discovery and the appropriate agencies notified immediately.

## **BIOTIC COMMUNITIES AND THREATENED AND ENDANGERED SPECIES OF FLORA AND FAUNA**

As part of this evaluation, the Arizona Game and Fish Department (AGFD) and the Navajo Fish and Wildlife Department were contacted to request information regarding potential impacts to threatened or endangered species or species of special concern.

The AGFD indicated that their records show that several special species have been documented as occurring within the proposed airport development area and they are as follows: gladiator milk vetch, Peebles Navajo cactus, paper-spined cactus, roundleaf errazurizia, and the Springerville pocket mouse. Each of these species have been classified by governmental and state agencies of being either endangered, sensitive, highly safeguarded, or salvage restricted.

Presently, the Navajo Fish and Wildlife Department has no record of species of concern within the proposed airport development area. Prior to development, a biological survey during the appropriate seasons may be needed to evaluate the types of native vegetation or species to be disturbed by the proposed development and to determine whether any impacts to the above referenced species would be anticipated.

## **COASTAL MANAGEMENT PROGRAM AND COASTAL BARRIERS**

The proposed development of Holbrook Municipal Airport is not located within the jurisdiction of a State Coastal Management Program. The Coastal Zone Barrier

resources system consists of undeveloped coastal barriers along the Atlantic and Gulf Coasts. These resources are well outside of the sphere of influence of the airport and its vicinity, and do not apply to the proposed development.

## **WILD AND SCENIC RIVERS**

The proposed development of Holbrook Municipal Airport is not located within the vicinity of a designated wild or scenic river. No impacts to wild and scenic rivers is anticipated as a result of the proposed airport development.

## **WATERS OF THE U.S., INCLUDING WETLANDS**

A review of the 1999 Holbrook Arizona Wetland Map maintained by the U.S. Fish and Wildlife Service, indicated that there are no wetlands within the proposed development area. The Corps of Engineers has indicated that a permit under Section 404 of the Clean Water Act is required for the development of the crosswind runway.

## **FLOODPLAINS**

According to floodplain mapping from the Federal Emergency Agency, there are no floodplains designated within the vicinity of the proposed airport development for Holbrook Municipal Airport.

## **FARMLAND**

According to correspondence received from the U.S. Department of Agriculture, the proposed improvements to Holbrook Municipal Airport "is exempt from the requirements of the Farmland Protection Policy Act (FPPA)-as revised in 1994, that excludes land which is already in or is committed to urban development, currently used as water storage or land that is not prime or unique farmland."

## **ENERGY SUPPLY AND NATURAL RESOURCES**

No concern regarding existing energy production facilities or known energy resource supplies was expressed by the agencies for this proposed development. A slight increase in energy demand will likely occur as a result of the proposed project. Additional electricity will be needed for the proposed crosswind runway, navigation lights, construction of new hangars and terminal building, and parking areas. In addition to this electric demand, expenditures of manpower, fuel, electricity, chemicals, water and other forms of energy will be necessary to construct the improvements and to provide for maintenance and operation of the facilities.

## LIGHT EMISSIONS

The proposed lighting improvements for the airport include the installation of medium intensity runway lights (MIRL), medium intensity taxiway lights (MITL), and runway end identification lights (REILs) and precision approach path indicators (PAPIs). It is also anticipated that outdoor lighting would be installed within the automobile parking areas, aircraft parking apron and surrounding FBO buildings and hangars. Because of the distance from the airfield to light-sensitive land uses, impacts associated with any new light emissions are not expected to be significant. However, shielding of REIL and PAPI lighting may be considered at the Runway 3 and 29 ends which are directed towards existing residential and commercial developments.

## SOLID WASTE

Slight increases in the generation of solid waste are anticipated as a result of the proposed development and overall growth in aviation activity. According to correspondence received from the Arizona Department of Environmental Quality, all solid waste must be transmitted to an ADEQ approved facility.

Because landfills can attract birds for feeding, the location of landfills near airports is not desired. Normally, landfills are discouraged within five miles of a runway end or within a 10,000-foot radius of jet airports and a 5,000-foot radius of non-jet airports. The closest landfill to Holbrook Municipal Airport is located eight miles west near Joseph City. Therefore, this landfill will not affect the proposed airport development.

## CONSTRUCTION IMPACTS

Construction activities have the potential to create temporary environmental impacts at an airport. These impacts primarily relate to noise from heavy construction equipment, fugitive dust emissions resulting from construction activities, and potential impacts on water quality runoff and soil erosion from exposed surfaces.

A temporary increase in particulate emissions and fugitive dust may result from construction activities. The use of temporary dirt access roads would increase the generation of particulates. Dust control measures, such as watering exposed soil areas, will need to be implemented to minimize this localized impact.

Any necessary clearing and grubbing of construction areas should be conducted in sections or sequenced to minimize the amount of exposed soil at any time. All vehicular traffic should be restricted to the construction site and established roadways.

The provisions contained in *FAA Advisory Circular 150/5370-10, Standards for Specifying Construction of Airports, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control* should be incorporated into all project specifications. During



construction, temporary dikes, basins, and ditches should be utilized to control soil erosion and sedimentation and to prevent degradation of off-airport surface water quality. After construction is complete, slopes and denuded areas should be reseeded to aid in the vegetation process.

## **CONCLUSION**

Based on the review of correspondence provided by various federal, state, and local agencies, potential environmental issues and considerations anticipated as a result of the proposed airport development and operation of Holbrook Municipal Airport have been identified and are summarized on **Exhibit D**. According to correspondence received from the Federal Aviation Administration, an environmental assessment will be required prior to constructing the crosswind runway.

As a result of this formal NEPA process, mitigation measures may be recommended to limit the potential impacts related to a number of these resources including water quality, waters of the U.S., biotic communities and threatened and endangered species of flora and fauna. Please note that as more specific information is gathered through the formal EA process, additional issues may arise.

CATEGORY	IMPACT
Noise	None, 65 DNL noise contour located on airport property.
Social Impacts	None
Socioeconomic Impacts	None
Air Quality	None, incorporate best management practices in construction programs.
Water Quality	To be determined, obtain section 404 permit, incorporate best management practices in construction programs.
Section 4(f) Lands	None
Historical/Cultural Resources	To be determined, complete archeological survey prior to construction, evaluate house and hangar for eligibility for listing in the National Registry of Historic Places.
Biotic Communities, Protected Species	To be determined, complete biological survey.
Wetlands	None
Floodplains	None
Coastal Zone Areas, Coastal Barriers	None, Not Applicable
Wild and Scenic Rivers	None, Not Applicable
Farmland	None
Energy Supply/Natural Resources	To be determined, additional energy use as a result of additional facility development.
Light Emissions	To be determined
Solid Waste Impacts	None
Construction	None, incorporate best management practices in construction programs.